

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A sludge harvester for removing a concentrated sludge from a sludge pond ~~comprising~~ that includes an aqueous dilute layer and a more concentrated sludge layer, the sludge harvester comprising:

a frame having an outer perimeter comprised of a plurality of sideboards and an interior portion at least partially bounded by said sideboards;

one or more wheels or skids attached to said frame;

means, at least partially disposed within said interior portion of said frame, for gently breaking up at least a portion of a sludge layer adjacent to an aqueous dilute layer without causing substantial while minimizing agitation of the sludge layer and mixing of the sludge layer and with the adjacent aqueous dilute layer;

means, at least partially disposed within said interior portion of said frame, for preferentially capturing at least a portion of a broken up sludge layer rather than the adjacent aqueous dilute layer ~~without also capturing a substantial amount of liquid from the adjacent aqueous dilute layer;~~ and

means, communicating with said capturing means, for transporting captured sludge from within said frame to a location outside of a sludge pond during use.

2. (Original) A sludge harvester as recited in claim 1, wherein said frame includes a flat bed.

3. (Currently Amended) A sludge harvester as recited in claim 2, wherein said flat bed in combination with said ~~includes a plurality of sideboards~~ at least partially bounds said interior portion of said frame designed so as to reduce at least one of vortexing, turbulence, and mixing.

4. (Currently Amended) A sludge harvester as recited in claim 1, wherein said means for gently breaking up at least a portion of a sludge layer comprises a pin mixer.

5. (Currently Amended) A sludge harvester as recited in claim 1, wherein said means for gently breaking up at least a portion of a sludge layer comprises an auger.

6. (Currently Amended) A sludge harvester as recited in claim 1, wherein said means for gently breaking up at least a portion of a sludge layer comprises a rake having a plurality of spaced-apart teeth attached to said frame and which generally point downward relative to said frame in order to cut through and break up a sludge layer when the sludge harvester is pulled through a sludge pond.

7. (Currently Amended) A sludge harvester as recited in claim 1, wherein said means for capturing at least a portion of a broken up sludge layer comprises a pump positioned on said frame so that an inlet of said pump into which sludge is captured is submerged within the sludge layer of the sludge pond when the sludge harvester is in use.

8. (Original) A sludge harvester as recited in claim 7, wherein said pump is designed so as to pump about 200 gallons per minute or less during use.

9. (Original) A sludge harvester as recited in claim 7, wherein said pump is designed so as to pump about 150 gallons per minute or less during use.

10. (Original) A sludge harvester as recited in claim 7, wherein said pump is designed so as to pump about 100 gallons per minute or less during use.

11. (Original) A sludge harvester as recited in claim 1, wherein the sludge harvester is designed so as to be self-propelled.

12. (Original) A sludge harvester as recited in claim 1, further comprising at least one of a tow rope, a chain, or a cable for pulling the sludge harvester through a sludge pond during use.

13. (Currently Amended) A ~~non-self-propelled~~ sludge harvester for removing a concentrated nutrient sludge from a sludge pond that includes an aqueous dilute layer and a more concentrated sludge layer, the sludge harvester comprising:

a frame;

one or more wheels or skids attached to said frame that support said frame when the sludge harvester is pulled through a sludge pond;

~~at least one of a tow rope, a chain, or a cable for pulling the non-self-propelled sludge harvester through a sludge pond during use;~~

at least one of a pin mixer, auger or rake having a plurality of spaced-apart teeth attached to said frame and which generally point downward relative to said frame designed and positioned so as to ~~gently~~ break up at least a portion of a sludge layer adjacent to an aqueous dilute layer ~~without causing substantial~~ while minimizing agitation of the sludge layer and mixing of the sludge layer ~~and with~~ the adjacent aqueous dilute layer when the sludge harvester is in use; and

at least one suctioning pump designed and positioned on said frame so that an inlet of said pump is positioned so as to preferentially capture a broken up sludge layer rather than the adjacent aqueous dilute layer so as to capture at least a portion of a broken up sludge layer without also capturing a substantial amount of liquid from the adjacent dilute layer.

14. (Currently Amended) A ~~non-self-propelled~~ sludge harvester as recited in claim 13, wherein said pump is designed so as to pump a volume in a range of about 50 to about 150 gallons per minute during use ~~so as to not capture a significant portion of the adjacent dilute layer during use.~~

15. (Currently Amended) A ~~non-self-propelled~~ sludge harvester as recited in claim 13, wherein said frame further includes a flat bed and a plurality of sideboards that at least partially define an interior portion in which said pump inlet is positioned ~~designed~~ so as to reduce at least one of vortexing, turbulence, and mixing that might otherwise cause substantial mixing of the sludge layer and the adjacent aqueous dilute layer.

16. (Currently Amended) A method of processing a concentrated nutrient sludge from a sludge pond, comprising:

providing a sludge harvester as recited in claim 1;

introducing said sludge harvester into a sludge pond having a dilute layer and a sludge layer; and

operating said sludge harvester so as to recover ~~an organic~~ a sludge product comprising a portion of the sludge layer.

17. (Currently Amended) A method as recited in claim 16, wherein said recovered ~~organic~~ sludge product has a high concentration of soluble nutrients.

18. (Original) A method as recited in claim 16, wherein operation of said harvester is at least partially automated.

19. (Currently Amended) A method as recited in claim 16, further comprising removing water from said ~~organic~~ sludge product to yield a wet or dry organic fertilizer product.

20. (Currently Amended) A method as recited in claim 16, further comprising applying said ~~organic~~ sludge product onto agricultural land.

21. (Currently Amended) A sludge harvester for removing a concentrated nutrient sludge from a sludge pond that includes an aqueous dilute layer and a more concentrated sludge layer, the sludge harvester comprising:

a frame having a flat bed;

one or more wheels or skids attached to said frame;

means for ~~gently~~ breaking up at least a portion of a sludge layer adjacent to an aqueous dilute layer without causing substantial while minimizing agitation of the sludge layer and mixing of the sludge layer and with the adjacent aqueous dilute layer; and

a pump attached to said frame for capturing at least a portion of a broken up sludge layer, wherein said pump is designed to pump about 200 gallons per minute or less during use, wherein an inlet of said pump through which sludge is captured is positioned beneath said flat bed in order to preferentially capture a broken up sludge layer rather than the adjacent aqueous dilute layer without also capturing a substantial portion of liquid from the adjacent dilute layer.

22. (Currently Amended) A sludge harvester for removing a concentrated nutrient sludge from a sludge pond, comprising:

a frame;

one or more wheels or skids attached to said frame;

at least one of a pin mixer, auger or rake having a plurality of spaced-apart teeth attached to said frame and which generally point downward relative to said frame designed and positioned so as to gently break up at least a portion of a sludge layer adjacent to a dilute layer ~~without causing substantial while minimizing agitation of the sludge layer and~~ mixing of the sludge layer and with the adjacent aqueous dilute layer when the sludge harvester is in use; and

at least one pump designed so as to pump a volume of about 200 gallons per minute or less during use and having an inlet positioned so as to preferentially capture at least a portion of a broken up sludge layer rather than the adjacent aqueous dilute layer without also capturing a substantial portion of liquid from the adjacent dilute layer.